International Surgery Journal
Goel A et al. Int Surg J. 2018 Jan;5(1):228-231
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: http://dx.doi.org/10.18203/2349-2902.isj20175900

Original Research Article

A comparison of Lichtenstein repair versus posterior wall repair plus mesh repair for direct inguinal hernias

Anubhav Goel[1]*, Ankur Bansal[2], Dipt Kumar[1], Abhishek Pathak[1]

[1]Department of Surgery, Sarojini Naidu Medical College, Agra, Uttar Pradesh, India
[2]Department of Surgery, S. R. Hospital, Agra, Uttar Pradesh, India

Received: 10 November 2017
Accepted: 09 December 2017

***Correspondence:**
Dr. Anubhav Goel,
E-mail: dranubhav1234@yahoo.com

ABSTRACT

Background: Lichtenstein's tension free mesh repair is the most commonly performed in open inguinal hernias. The present study was done by comparing Lichtenstein Repair (LR) v/s posterior wall repair (PR)+ Lichtenstein repair (LR) of direct Inguinal Hernias to compare the technique of both surgeries and its outcome like postoperative complications and recurrence rate.
Methods: This study was conducted in SNMC Agra where patients of unilateral male direct inguinal hernia were included. A total of 60 patients were taken and divided into two groups (A and B) randomly of 30 each. In group A patients were operated by LR and in group B patients were operated by PR+LR and followed up for a period of six months. The outcomes of the both techniques were compared.
Results: Mean age was 48.3 years in group A and 49.5 in group B. The mean duration of surgery for group A is around 29.34 min and group B is 46.28 min which was significant. The pain was not statistically significant in both groups on day 1 and 3. There was 1 (3.3%) recurrence in group A and no recurrence in group B. Post-operative complications were similar in both groups.
Conclusions: LR+PR were comparatively better than only LR in all direct inguinal hernias because of low recurrence rate (0%).

Keywords: Hernia, Lichtenstein, Mesh repair

INTRODUCTION

The earliest record of inguinal hernia dates back to around 1500 BC in ancient Egypt.[1] Hernia may be generally defined as the protrusion of an abdominal viscus outside the abdominal cavity through a natural or acquired defect. As Sir Astley Paston Cooper stated no disease of human body, belonging to the province of surgeon, requires in its treatment a better combination of accurate anatomical knowledge with surgical skill than hernia in all its varieties.[2] A thorough knowledge is a must for a surgeon. Sir John Bruce of Edinburgh said: "The final word on hernia will probably never be written. In collecting, assimilating and distilling the wisdom of today we must provide a base from which further advances may be made.[3]

Inguinal hernias account for 75% of abdominal wall hernias, with a lifetime risk of 27% in men and 3% in women.[4] Indirect hernia outnumber direct hernia by about 2:1.

Many types of hernia repair are described, traditional methods like modified bassini's repair, shouldice repair and lichtenstein mesh repair and now laparoscopic mesh repair.[5] Many comparative randomized trials have

showed that in open hernia repair, lichtenstein tension free repair is superior to traditional tissue approximation methods.[6,7]

Lichtenstein's tension free mesh repair is the most commonly performed in open inguinal hernias.

The present study was done by comparing Lichtenstein Repair (LR) v/s posterior wall repair (PR) + mesh repair (MR) of direct Inguinal Hernias and its outcome like postoperative complications and recurrence rate.

METHODS

This prospective comparative randomized study was conducted in Sarojini Naidu Meddical College, Agra where patients of unilateral male direct inguinal hernia was included. Age is between 18 to 60 years. The study was conducted from January 2106 to June 2017 (eighteen months).

Indirect inguinal hernias, congenital hernias, hernia in pregnant women, recurrent hernias and femoral hernia, history of lower abdominal surgery previously were excluded from the study.

A total of 60 patients were taken and divided into two groups (A & B) randomly of 30 each. In group A patients were operated by LR and in group B patients were operated by PR+MR and followed up for a period of six months.

The diagnosis was based on clinical findings and confirmed intraoperatively. Routine investigations, for the fitness of the patient to undergo surgery. Spinal anesthesia was used in both groups. Intraoperative Foleys catheter was placed.

For all cases, a classical incision i.e., 2 cm above and parallel to the medial three fifths of the inguinal ligament (right or left side based on side of hernia). External oblique aponeurosis is identified and incised along the direction of fibres. Cord is identified, and sac is separated from cord structures.

In group A mesh was placed over it and fixed to inguinal ligament below and to the conjoint tendon above with 1-0 prolene interrupted sutures with key stitch to the periosteum of symphysis pubis.

In group B posterior wall repair was done by modified bassini repair (conjoint tendon was approximated to inguinal ligament) followed by mesh placement and fixed to inguinal ligament below and to the conjoint tendon above with 1-0 prolene interrupted sutures with key stitch to the periosteum of symphysis pubis.

In postoperative period, inj diclofenac 75mg BD was given for 48 hours to both the groups for pain relief. Postoperatively patients were evaluated for pain, haematoma, seroma and infection.

Suture removal was done on 10th postoperative day. Two patients were lost in group A and four patients in group B on follow up. Postoperative follow-up was through physical examination and through telephonic conversations. All patients were followed up for six months postoperatively with regular follow up monthly for first three months, then at 6 months to see any postoperative complications. The outcomes of the both techniques were compared.

RESULTS

Mean age was 48.3 years in group A and 49.5 in group B. In group A 21 cases is of right side and 9 of lest side. In group B 19 cases of right side and 11 of left side. The mean duration of surgery for group A is around 29.34 min and group B is 46.28 min.

Table 1: Site of hernia.

Site of hernia	Group A	Group B
Right	21	19
Left	9	11

Table 2: Duration of surgery.

Duration of surgery	Group A	Group B
Time (mean)	29.34 min	46.28 min

Table 3: Post operative pain.

Days	Group A	Group B
Day 0	4.3	4.7
Day 1	2.4	2.6
Day 3	1.3	1.6
Day 7	1.2	1.3

The pain was evaluated using Visual Analog Score (VAS) not significant in both groups on day 1, 3 and 7. There was 1 (3.3%) recurrence in group A and no recurrence in group B at the duration of six month. Post operative complications like hematoma was none both groups. Seroma collection was one (1) in both groups. Post operative infection was one in group A and two in group B. Postoperative stay was comparable in both groups.

Table 4: Post operative complications.

Complications	Group A	Group B
Haematoma	0	0
Seroma	1	1
Infection	1	2
Recurrence	1	0
Retention of urine	1	2
Pain at six month (VAS)	0.6	1.1

Table 5: Postoperative stay.

Duration	Group A	Group B
Days	3.2 days	3.4 days

DISCUSSION

Despite the fact that inguinal hernia repair is the most frequent procedure in surgical practice and lots of repair types have been described, efforts to find new techniques have not come to an end, yet. The main factor underlying these searches is to decrease the rates of recurrence. Additionally, applicability, complication rates, hospital stay, labor loss, and overall cost-effectiveness of the techniques have been questioned in the recent years. In these studies, tension-free repair with synthetic mesh has been reported to be superior to other modalities, in both open and laparoscopic surgery.[8] The recurrence rate for inguinal hernias after doing primary repair is about 0.5% - 10%.[9,10] In present era the indication for Bassini's repair is the conditions where mesh is contraindicated like infection. The Lichtenstein technique is an ideal hernia repair with low costs, high patient comfort and suitability for day-surgery.[11]

In this study direct inguinal hernia was included because abdomen muscle is lax and has poor abdominal muscle tone. For this reason a proper strengthening of posterior wall of the inguinal canal is important.

We compared lichenstein tension free mesh repair (LR) v/s modified Bassini repair and posterior mesh repair (PR + MR). In this study, we made an attempt to give highest possible strength by combining modified Bassini's+ posterior mesh repair. Generally direct hernia defects in old age are large and in open method, it is not easy to cover the large defect with mesh. So, this method was used to cover the defect by modified Bassini's repair and reinforced by posterior mesh repair. Mesh will give additional protection to abdominal muscle. In present study all surgeries were performed by a single surgeon, so that there would not be any difference in the outcome of study.

All patients were above 50 years of age, and the most representative age group was from 61-70 years, with 32 patients. Direct hernia was seen in 30 patients (52.63%) and indirect hernia was seen in 27 (47.36%) patients.[12] Direct inguinal hernia is more common in adult population as in present study.

For over a century, the success of inguinal hernia repairs is evaluated with their recurrence rates. In a study including 1098 patients by Kark et al, Lichtenstein procedure was reported to have a recurrence rate of 0.1%.[13] Bellone et al found the same rate following their tension-free repair as 0.8% in 119 patients.[14] McGillicuddy compared Lichtenstein and Shouldice techniques and found the recurrence rates as 0.2% and 1%, respectively.[15] Koninger found recurrences rates of 0.3% following a tension-free repair.[16] Amid et al studied 4000 patients and followed them up for 5 years and found the recurrence rates as 0.1% in their clinical trials.[17] In present study there was recurrence of 1 (1.6%) in 60 cases which is comparable with above studies.

Aasvang and Kehlet study showed that incidence of chronic pain after inguinal herniorrhaphy was 12%.[18] O'Dwyer and colleagues study had found severe or very severe chronic post herniorrhaphy pain in 3% of patients, which had severe effect on patient's capacity to do work.[19] In present study pain was measured using Visual Analog Scale. It was between 4-5 on day 0 and 1-3 from day 1 to 7. There was no significant acute pain any of our cases. Chronic groin pain at six month was also not significant in both groups.

The wound infection rates are around 1-7%.[20] In a study conducted by Finley RK Jr, the urinary retention is around 0.2% to 13% based on anaesthesia.[21] Injury to vas deferens is 0.3% in adults and 0.8-2% in children.22 Atrophy of testis is seen in 0.5% of primary hernia repair and 5% in recurrent hernia repair.[22]

In present study wound infection was in 3(5%) and retention of urine was also 3(5%).

CONCLUSION

There can be variations in the incidence of pain, recurrence, complications due to many factors like age, gender, co-morbid illness, experience of a surgeon, duration of surgery, method of repair, and mode of anaesthesia. PR+MR were comparatively better than only LR in direct inguinal hernias because of less recurrence but large group study is needed for final conclusion.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Ebbell B. The ebers papyrus. The greatest egyptian medical document. London: H. Milford and Oxford University Press;1937:123.
2. Daniel J, Daniel BJ. Surgery. Basic Science and Clinical Evidence. 2008;2:1133.
3. Bruce J. Forward. In: Nyhus LM, Harkins HN, eds. Hernia. 1st ed. Philadelphia: Lippincott;1964.
4. Kingsnorth A, LeBlanc K. Hernias: inguinal and incisional. Lancet. 2003;362:1561-71.
5. Cervantes J. Inguinal Hernia in the New Millennium. World J Surg. 2004;28:343-7.
6. Cheong KX, Lo HY, Neo JX, Appasamy V, Chiu MT. Inguinal hernia repair: are the results from a general hospital comparable to those from dedicated hernia centres? Singapore Med J. 2014;55(4):191-7.

7. Harjai Lt Col MM, Nagpal Brig BM, et al. A Prospective randomized controlled study of Lichtenstein's tension free versus modified bassini repair in the management of groin hernias. MJAFI. 2007;63:40-3.
8. R. Bittner and J. Schwarz. Inguinal hernia repair: current surgical techniques. Langenbeck's Arch Surg. 2012;397(2):271-82.
9. Bay-Nielsen M, Kehlet H, Strand L, Malmstrøm J, Andersen FH, Wara P, et al. Quality assessment of 26,304 herniorrhaphies in Denmark: a prospective nationwide study. Lancet. 2001;358:1124-8.
10. Jansen PL, Klinge U, Jansen M, Junge K. Risk factors for early recurrence after inguinal hernia repair. BMC Surg. 2009;9:18.
11. Hetzer FH, Hotz T, Steinke W, Schlumpf R, Decurtins M, Largiader F. Gold standard for inguinal hernia repair: Shouldice or Lichtenstein?. Hernia. 1999 Sep;3(3):117-20.
12. Shyam DC, Rapsang AG. Inguinal hernias in patients of 50 years and above. Pattern and outcome. Rev Col Bras Cir. 2013;40(5):374-9.
13. Kark AE, Kurzer M, Waters KJ. Tension-Free mesh hernia repair. Reviev of 1098 cases using local anaesthesia in day unit. Annal Royal Coll Surg England. 1995;77(4):299-304.
14. Bellone D, Sacco D, Spidalieri G, Cardiono L. Tension-free hernioplasty. Minerva Chirurgica. 1999;54(3):123-5.
15. McGillicuddy JE. Prospective randomized comparison of the Shouldice and Lichtenstein hernia repair procedures. Arch Surg. 1998;133(9):974-8.
16. Köninger JS, Oster M, Butters M. Management of inguinal hernia. Chirurgie. 1998;69(12):1340-4.
17. Wantz GE. My experience in repairing, without tension, primary inguinal hernia in men. Chirurgie. 1997;122(2):111-6.
18. Aasvang E, Kehlet H. Chronic postoperative pain: the case of inguial herniorrhaphy. Br J Anaesth. 2005;95:69-76.
19. O'Dwyer PJ, Serpell MG, Millar K, Paterson C, Young D, Hair A et al. Local or general anaesthesia for open hernia repair: a randomized trial. Ann Surg. 2003;237:574-9.
20. Jenkins JT, O Dwyer PJ. Inguinal hernias. BMJ. 2008;336:269-72.
21. Finley RK, Miller SF, Jones LM. Elimination of urinary retention following inguinal herniorrhaphy. Am Surg. 1991;57:486-8.
22. Fitzgibbons RJ. Can we be sure that polypropylene mesh causes infertility? Ann Surg. 2005;241:559-61.

Cite this article as: Goel A, Bansal A, Kumar D, Pathak A. A comparison of Lichtenstein repair versus posterior wall repair plus mesh repair for direct inguinal hernias. Int Surg J 2018;5:228-31.